



Val	Gln	Ala	Asp	Ser	Ser	Lys	Glu	Glu	Asp	Asn	Lys	Lys	Leu	Ile	Ser		
65						70				75					80		
gaa	act	ctg	gca	acc	ttt	ggg	ggc	ctg	gat	att	gtt	tgt	gct	aat	gca		288
Glu	Thr	Leu	Ala	Thr	Phe	Gly	Gly	Leu	Asp	Ile	Val	Cys	Ala	Asn	Ala		
				85					90					95			
gga	att	gga	aag	ttc	gct	ccc	acc	cat	gaa	aca	ccc	ttc	gac	gta	tgg		336
Gly	Ile	Gly	Lys	Phe	Ala	Pro	Thr	His	Glu	Thr	Pro	Phe	Asp	Val	Trp		
			100					105					110				
aag	aag	gtg	att	gct	gtg	aat	ttg	aat	gga	gta	ttc	tta	ctg	gat	aag		384
Lys	Lys	Val	Ile	Ala	Val	Asn	Leu	Asn	Gly	Val	Phe	Leu	Leu	Asp	Lys		
		115					120					125					
cta	gcc	atc	aat	tac	tgg	cta	gag	aaa	agc	aaa	ccc	ggc	gta	att	gtc		432
Leu	Ala	Ile	Asn	Tyr	Trp	Leu	Glu	Lys	Ser	Lys	Pro	Gly	Val	Ile	Val		
	130					135					140						
aac	atg	gga	tca	gtc	cac	tct	ttt	gta	gca	gct	cct	ggc	ctt	gcg	cat		480
Asn	Met	Gly	Ser	Val	His	Ser	Phe	Val	Ala	Ala	Pro	Gly	Leu	Ala	His		
145					150				155					160			
tat	gga	gct	gca	aaa	ggc	ggt	gtc	aaa	ctg	tta	aca	caa	aca	ttg	gct		528
Tyr	Gly	Ala	Ala	Lys	Gly	Gly	Val	Lys	Leu	Leu	Thr	Gln	Thr	Leu	Ala		
				165				170						175			
cta	gag	tac	gca	tct	cat	ggt	att	aga	gta	aat	tct	gtc	aat	ccg	ggg		576
Leu	Glu	Tyr	Ala	Ser	His	Gly	Ile	Arg	Val	Asn	Ser	Val	Asn	Pro	Gly		
			180					185					190				
tac	att	tcg	act	cct	ttg	ata	gat	gag	gtt	ccg	aaa	gag	cgg	ttg	gat		624
Tyr	Ile	Ser	Thr	Pro	Leu	Ile	Asp	Glu	Val	Pro	Lys	Glu	Arg	Leu	Asp		
		195					200					205					
aaa	ctt	gta	agc	ttg	cac	cct	att	ggg	aga	cta	ggt	cgt	cca	gag	gaa		672
Lys	Leu	Val	Ser	Leu	His	Pro	Ile	Gly	Arg	Leu	Gly	Arg	Pro	Glu	Glu		
	210					215					220						
gtt	gct	gat	gca	gtc	gca	ttt	ctg	tgt	tcc	cag	gag	gcc	act	ttc	atc		720
Val	Ala	Asp	Ala	Val	Ala	Phe	Leu	Cys	Ser	Gln	Glu	Ala	Thr	Phe	Ile		
225					230					235					240		
aac	ggc	gtt	tct	ttg	ccg	gtt	gac	ggg	ggg	tac	aca	gcc	cag	taa			765
Asn	Gly	Val	Ser	Leu	Pro	Val	Asp	Gly	Gly	Tyr	Thr	Ala	Gln				
				245					250								

```
<210> 2
<211> 254
<212> PRT
<213> Pichia finlandica
```

```
<400> 2
Met Ser Tyr Asn Phe His Asn Lys Val Ala Val Val Thr Gly Ala Leu
 1          5          10          15
Ser Gly Ile Gly Leu Ser Val Ala Lys Lys Phe Leu Gln Leu Gly Ala
```

	20		25		30
Lys Val Thr Ile Ser Asp Val Ser Gly Glu Lys Lys Tyr His Glu Thr					
	35		40		45
Val Val Ala Leu Lys Ala Gln Asn Leu Asn Thr Asp Asn Leu His Tyr					
	50		55		60
Val Gln Ala Asp Ser Ser Lys Glu Glu Asp Asn Lys Lys Leu Ile Ser					
65			70		75
Glu Thr Leu Ala Thr Phe Gly Gly Leu Asp Ile Val Cys Ala Asn Ala					
	85		90		95
Gly Ile Gly Lys Phe Ala Pro Thr His Glu Thr Pro Phe Asp Val Trp					
	100		105		110
Lys Lys Val Ile Ala Val Asn Leu Asn Gly Val Phe Leu Leu Asp Lys					
	115		120		125
Leu Ala Ile Asn Tyr Trp Leu Glu Lys Ser Lys Pro Gly Val Ile Val					
	130		135		140
Asn Met Gly Ser Val His Ser Phe Val Ala Ala Pro Gly Leu Ala His					
145			150		155
Tyr Gly Ala Ala Lys Gly Gly Val Lys Leu Leu Thr Gln Thr Leu Ala					
	165		170		175
Leu Glu Tyr Ala Ser His Gly Ile Arg Val Asn Ser Val Asn Pro Gly					
	180		185		190
Tyr Ile Ser Thr Pro Leu Ile Asp Glu Val Pro Lys Glu Arg Leu Asp					
	195		200		205
Lys Leu Val Ser Leu His Pro Ile Gly Arg Leu Gly Arg Pro Glu Glu					
	210		215		220
Val Ala Asp Ala Val Ala Phe Leu Cys Ser Gln Glu Ala Thr Phe Ile					
225			230		235
Asn Gly Val Ser Leu Pro Val Asp Gly Gly Tyr Thr Ala Gln					
	245		250		

<210> 3  
 <211> 10  
 <212> PRT  
 <213> Pichia finlandica

<400> 3  
 Val Ala Val Val Thr Gly Ala Leu Ser Gly  
 1 5 10

<210> 4  
 <211> 12  
 <212> PRT  
 <213> Pichia finlandica

<400> 4  
 Leu Ile Ser Glu Thr Leu Ala Thr Phe Gly Gly Leu  
 1 5 10

<210> 5  
 <211> 10  
 <212> PRT  
 <213> Pichia finlandica

<400> 5  
 Leu Gly Arg Pro Glu Glu Val Ala Asp Ala  
 1 5 10

<210> 6  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificially synthesized primer sequence

<221> misc\_feature  
 <222> (1)...(9)  
 <223> BamHI site

<400> 6  
 gtcg gatccg tb gchgtbgt bachgghgc

29

<210> 7  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificially synthesized primer sequence

<221> misc\_feature  
 <222> (1)...(9)  
 <223> BamHI site

<221> misc\_feature  
 <222> 15, 18, 27  
 <223> n = a, c, t or g

<400> 7  
 gtcg gatccg crt cngc nac ytcytcngg

29

<210> 8  
 <211> 623  
 <212> DNA  
 <213> *Pichia finlandica*

<400> 8  
 gctctatcag gaatcggtt aagcgtcgca aaaaagttcc ttcagctcgg cgccaaagta 60  
 acgatctctg atgtcagtgg agagaaaaaa tatcacgaga ctgttggtgc tctgaaagcc 120  
 caaaatctca aactgacaa cctccattat gtacaggcag attccagcaa agaagaagat 180  
 aacaagaaat tgatttcgga aactctggca acctttgggg gcctggatat tgtttggtgct 240  
 aatgcaggaa ttggaaaagt cgctcccacc catgaaacac ctttcgacgt atggaagaag 300  
 gtgattgctg tgaatttgaa tggagtattc ttactggata agctagccat caattactgg 360  
 ctagagaaaa gcaaaccgg cgtaattgtc aacatgggat cagtccactc tttttagtagca 420  
 gctcctggcc ttgcgcatta tggagctgca aaaggcgggtg tcaaactgtt aacacaaaca 480  
 ttggctctag agtacgcatt tcatgggtatt agagtaaatt ctgtcaatcc ggggtacatt 540  
 tcgactcctt tgatagatga ggttccgaaa gagcgggttg ataaacttgt aagcttgacac 600  
 cctattggga gactaggtcg tcc 623

<210> 9  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificially synthesized primer sequence

<221> misc\_feature  
 <222> (1)...(9)  
 <223> BamHI site

<400> 9  
 gtcggatcct cagagatcgt tactttggc

29

<210> 10  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Artificially synthesized primer sequence

<221> misc\_feature  
 <222> (1)...(9)  
 <223> BamHI site

<400> 10  
 gtcggatccc gactcctttg atagatgag

29

<210> 11  
 <211> 599  
 <212> DNA  
 <213> *Pichia finlandica*

<400> 11  
 tgggctgaac ctggctgtgc tactgggcag agcaaaatca gatagaagag cttgtgtttt 60  
 tgtagcacc ctctttttt ttgaaattct ctacagctca attacctgtt cacattcaat 120  
 acagagtact atcttttcga tttcttatca gataagcaat tgacaatatt agtagcacct 180  
 gatgcacttt tcgagaacac acctgagtac aaaacaatat atatcattat attagaacag 240  
 tgacattgag aacaattttc cagcatataa tgtaattagg tgcacaaaca accaggaaaa 300  
 acacctgatt aaaaaatccg gatattaaga atcatgaaac aaaattcaat gttaccctac 360  
 ccattccttc tcggaacctc ctgatgactt attaatagtg aggttggtcc gataaaaatc 420  
 gcgaatttct ccattccata aattctccta taacttggct tactatacac acacactatt 480  
 atcgatatgt cttataactt ccataacaag gttgcagttg ttactggagc tctatcagga 540  
 atcggtctaa gcgtcgcaaa aaagttcctt cagctcggcg ccaaagtaac gatctctga 599

<210> 12  
 <211> 581  
 <212> DNA  
 <213> *Pichia finlandica*

<400> 12  
 cgactccttt gatagatgag gttccgaaag agcggttgga taaacttgta agcttgcacc 60  
 ctattgggag actaggtcgt ccagaggaag ttgctgatgc agtcgcattt ctgtgttccc 120  
 aggaggccac tttcatcaac ggcgtttctt tgccggttga cggggggtac acagcccagt 180  
 aaattggaca ctttttgctc tttattatct tccccgcgtt tcaccaatta tccggtgtac 240  
 gtaggttgca gtgactttct ggtttctgca cttgaatgaa actctctttt accccacaaa 300  
 atcagctcag taaattatct tgtgtatata taaataagac agaaaccctg tggactccta 360  
 gtatggtggt ctactttcat taaggcagtc acaaaagcaa tggcgaaatc aactgatgga 420  
 aagatagtta cactggagga gcaggcctac aatggccac ccgcacggat cataggagaa 480  
 gctatcgcca ttaaagcgaa gctggctgcc aatcgacac tcccagttaa gtttgaaaga 540

aagcgtgggtc ttcaaccacc accagggatg tctagacaag a

581

<210> 13

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificially synthesized primer sequence

<400> 13

tcgacatgtc ttataatttc cataacaag

29

<210> 14

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificially synthesized primer sequence

<400> 14

gcagaattcc tctagattac tgggctgtgt accc

34

<210> 15

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificially synthesized primer sequence

<400> 15

cacgaattct aaaatgtctt ataatttcca taacaag

37

<210> 16

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificially synthesized primer sequence

<400> 16

agtactagta ttactgggct gtgtaccc

28

<210> 17

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificially synthesized primer sequence

<400> 17

agaccatgga tccaatgtat ccagatttaa aaggaa

36

BEST AVAILABLE COPY

<210> 18  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Artificially synthesized primer sequence

<400> 18  
gaatctagat taaccgcggc ctgcctg

27

<210> 19  
<211> 42  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Artificially synthesized primer sequence

<400> 19  
ctttctagag gaattcaacc atggcaaaag ttctgtgtgt tc

42

<210> 20  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Artificially synthesized primer sequence

<400> 20  
cagtctagat tagaccgctt ttttgaattt ggcg

34